CLAIM AMENDMENTS

Each claim of the present application is set forth below with a parenthetical notation immediately following the claim number indicating the claim status. The Examiner's entry of these amendments prior to examination of the subject application is respectfully requested.

1.-19. (CANCELLED)

20.   (NEW) A method for analyzing performance data of a plurality of locomotives to determine the need for remedial action to one or more of the plurality of locomotives, comprising:

receiving sets of performance data;

storing the sets of performance data;

assigning a priority to each set of performance data for the order in which the sets of performance data are to be analyzed;

analyzing the sets of performance data, according to the assigned priorities, by a plurality of data analysis tools within a respective analysis capability limit of each of the tools; and

creating a service recommendation based on the step of analyzing the sets of performance data.

21.   (NEW) The method of claim 20 wherein one or more of the plurality of data analysis tools simultaneously analyze a set of performance data, and wherein the analysis capability limit comprises a limit on a number of data analysis tool that can simultaneously analyze the set of performance data.

22.   (NEW) The method of claim 20 wherein the analysis capability limit comprises a limit on a number of sets of performance data that one of the plurality of data analysis tools can analyze.

23.   (NEW) The method of claim 20 wherein the recommendation is selected from among, a repair recommendation, a maintenance recommendation and a recommendation requesting collection of additional sets of performance data from the locomotive.

24. (NEW) The method of claim 20 wherein the step of analyzing further comprises determining an order according to which each one of the plurality of data analysis tools analyze a set of performance data.

25. (NEW) The method of claim 20 wherein the recommendation further comprises results from the step of analyzing and requests review of the analyzed performance data by an expert in the operation and repair of locomotives.

26. (NEW) The method of claim 20 further comprising:

compiling the sets of performance data into a plurality of download cases; and

wherein the step of analyzing further comprises analyzing one of more of the plurality of download cases by the plurality of data analysis tools, wherein one or more of the data analysis tools can simultaneously analyze more than one of the plurality of download cases.

27. (NEW) The method of claim 26 wherein the step of prioritizing further comprises:

prioritizing the plurality of download cases in response to attributes of a set of performance data and the elapsed time since the download case was compiled according to the step of compiling.

28. (NEW) The method of claim 20 wherein the step of prioritizing the sets of performance data further comprises prioritizing the sets of performance data according to high priority download cases and normal priority download cases.

29. (NEW) The method of claim 28 wherein the step of analyzing further comprises analyzing the high priority download cases prior to analyzing the normal priority downloaded cases.

30. (NEW) The method of claim 20 wherein the sets of performance data comprise operational parametric data associated with the locomotive and fault data indicating a possible fault condition of the locomotive.

31. (NEW) The method of claim 30 wherein the fault data indicates the occurrence of an out-of-specification condition on the locomotive.

32. (NEW) The method of claim 30 wherein the operational parametric data comprises parametric data collected over a time period and parametric data collected at spaced apart time intervals.

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33. (NEW) The method of claim 20 further comprising:

selecting, in response to the sets of performance data, one or more data analysis tools from the plurality of data analysis tools for analyzing the performance data according to the step of analyzing.

34. (NEW) The method of claim 20 further comprising:

providing the service recommendation to a railroad operator of the locomotive for implementation on the locomotive.

35. (NEW) The method of claim 20 further comprising

receiving critical sets of performance data from a locomotive from the plurality of locomotives, wherein the step of analyzing is executed on the critical sets of performance data within a predetermined time of receipt.

36. (NEW) The method of claim 20 wherein the sets of performance data comprise operational parametric data associated with locomotive operation and fault data indicating a possible fault condition on the locomotive, wherein the operational parametric data is available for receiving on a periodic schedule, and wherein the fault data is available for receiving after occurrence of a fault on a locomotive.

37. (NEW) The method of claim 20 wherein the analysis tools comprise a case-based reasoning tool, a trend anomaly tool, a Bayesian belief network tool, a fault classification tool and an anomaly detection tool.

38. (NEW) A method for generating a service recommendation for a locomotive, comprising:

receiving sets of recent locomotive performance data at a remote diagnostic site;

assigning a priority to each set of recent performance data for the order in which the sets of performance data are to be analyzed;

analyzing the sets of recent performance data, according to the assigned priorities, and sets of performance data from a look back period, by one or more of a plurality of data analysis tools; and

generating a service recommendation for the locomotive in response to the step of analyzing the sets of recent performance data and the sets of performance from the look back period

39. (NEW) The method of claim 38 further comprising segregating the sets of recent performance data into performance data cases, wherein the step of analyzing further

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comprises queuing the performance data cases in a system queue according to the step of assigning a priority.

40. (NEW) The method of claim 39 wherein each one of the plurality of data analysis tools comprises a tool queue, the method further comprising loading the performance data cases from the system queue into one or more of the tool queues.

41. (NEW) The method of claim 38 wherein the look back period extends back to a time when a prior service recommendation was generated for the locomotive.

42. (NEW) The method of claim 38 further comprising modifying a duration of the look back period.

43. (NEW) The method of claim 38 further comprising:

generating problem cases comprising service recommendations according to the step of generating a service recommendation; and

selecting a look back period to eliminate a problem case comprising a service recommendation that has been implemented by a locomotive operator.

44. (NEW) The method of claim 38 further comprising a step of generating problem cases comprising one or more of service recommendations according to the step of generating service recommendations, anomalous operating conditions according to the step of analyzing, detected faults according to the step of analyzing and requests for additional performance data according to the step of analyzing.

45. (NEW) The method of claim 44 further comprising providing the problem cases to a locomotive operator, wherein one or more of the problem cases are closed by the locomotive operator by implementing one or more of the service recommendations and others of the problem cases remain open.

46. (NEW) The method of claim 45 further comprising accumulating open problem cases.

47. (NEW) The method of claim 45 further comprising a step of detecting a repetitive problem case as a problem case comprising one or more of service recommendations, anomalous operating conditions, detected faults and requests for additional performance data present in a previously generated problem case.

48. (NEW) The method of claim 38 wherein the service recommendation comprises one or both of a repair recommendation and a maintenance recommendation.

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49. (NEW) An apparatus for analyzing performance data of a plurality of locomotives to determine the need for remedial action to one or more of the plurality of locomotives, comprising:

a download module for receiving sets of performance data;

a storage device for storing the sets of performance data;

a controller for assigning a priority to each set of performance data;

a plurality of data analysis tools for analyzing the sets of performance data, according to the assigned priorities and within a respective analysis capability limit of each one of the plurality of data analysis tools; and

a recommendation creator for creating a service recommendation in response to the plurality of data analysis tools.

50. (NEW) The apparatus of claim 49 wherein the storage device comprises a tool queue for each one of the plurality of data analysis tools, and wherein each one of the plurality of data analysis tools selects a set of performance data from the tool queue.

51. (NEW) The apparatus of claim 49 wherein the storage device comprises a system queue, and wherein each one of the plurality of data analysis tools selects a set of performance data from the system queue.

52. (NEW) The apparatus of claim 49 further comprising an analysis scheduler for activating one or more of the plurality of data analysis tools in response to availability of a set of performance data in the storage device.

53. (NEW) The apparatus of claim 49 further comprising a status table for indicating availability of sets of performance data in the storage device for analysis by one or more of the plurality of data analysis tools.

54. (NEW) The apparatus of claim 49 further comprising a tool execution table for storing analysis capability limit information for each of the plurality of data analysis tools.

55. (NEW) The apparatus of claim 54 further comprising an analysis scheduler for activating one or more of the plurality of data analysis tools in response to the respective analysis capability limit in the tool execution table.

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